

CLAIMS

What is claimed is:

1. A composite comprising:

a fibrous face layer, wherein the face layer has a top surface and a bottom surface

5 opposite the top surface, and wherein the face layer comprises a plurality of legs formed from loops dependent therefrom, and

an adhesive layer having a top surface that corresponds to the bottom surface of the fibrous face layer and is in direct contact with the bottom surface of the fibrous face layer, wherein the legs of the fibrous face layer are anchored in the adhesive layer.

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2. The composite of claim 1, wherein a top portion of the fibrous face layer above the top of the adhesive layer has a thickness of about 0.5 mm to about 2.0 mm.

15 3. The composite of claim 1, wherein a top portion of the fibrous face layer above the top of the adhesive layer has a basis weight of about 100 grams/m² to about 500 grams/m².

4. The composite of claim 1, wherein the fibrous face layer comprises a non-woven layer.

20 5. The composite of claim 4, wherein the legs of the fibrous face layer comprise free ends of fibers from the non-woven layer needle punched through the non-woven layer.

6. The composite of claim 5, wherein the needling density is at least 500 ppi.

25 7. The composite of claim 6, wherein the needling density is at least 1,000 ppi.

8. The composite of claim 1, wherein the fibrous layer comprises a stitch bonded and bulked fabric.

9. The composite of claim 8, wherein the stitch bonded and bulked fabric comprises a non-woven substrate stitch-bonded by shrinkable yarns.

10 The composite of claim 9, wherein the legs of the fibrous face layer comprise
5 undulating loops formed on the stitch bonded and bulked fabric.

11. The composite of claim 10, wherein the undulating loops have a frequency of about
12 loops per inch to about 60 loops per inch.

10 12. The composite of claim 1, wherein the fibrous layer comprises a pattern bonded and
bulked fabric.

13. The composite of claim 12, wherein the pattern bonded and bulked fabric comprises a
non-woven substrate pattern bonded to a shrinkable bonding substrate.

15 14. The composite of claim 13, wherein the legs of the fibrous layer comprise undulating
loops formed on the pattern bonded and bulked fabric.

15. The composite of claim 14, wherein the undulating loops have a frequency of about
20 12 loops per inch to about 60 loops per inch.

16. The composite of claim 1, wherein the fibrous layer comprises a reversed pile knit
fabric.

25 17. The composite of claim 16, wherein the legs of the fibrous layer comprise pile loops
of the reversed pile knit fabric.

18. The composite of claim 16, wherein the legs of the fibrous layer comprise cut and
raised free fiber ends of the reversed pile knit fabric.

19. The composite of claim 1, wherein the fibrous layer comprises a woven fabric.

20. The composite of claim 19, wherein the legs of the fibrous layer comprise cut and raised free fiber ends from the woven fabric.

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21. The composite of claim 1 further comprising a backing layer.

22. The composite of claim 5 further comprising a backing layer, and wherein the at least some of the legs penetrate the backing layer.

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23. The composite of claim 1 being embossable to form a three-dimensional textured product.

24. The composite of claim 1, wherein the face layer is spunlaced.

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25. The composite of claim 24, wherein the face layer is spunlaced substantially from the top surface.

26. A composite comprising:

20 a face layer comprising a plurality fibers, the face layer having a top surface and a bottom surface opposite the top surface, defining a thickness between the top and bottom surfaces; and

25 a continuous smooth uninterrupted adhesive layer in direct contact with the bottom surface, wherein the bottom surface has been altered to increase the surface area in contact with the adhesive layer and wherein the adhesive layer extending partially into the thickness of the face layer a distance sufficient to anchor the face layer in the adhesive layer.

27. The composite of claim 26, further comprising a backing in direct contact with the adhesive layer such that the adhesive layer is disposed between the face layer and the

30 backing, the adhesive layer extending into the backing.

28. The composite of claim 26, wherein the distance is from about $\frac{1}{4}$ to about $\frac{3}{4}$ of the thickness between the top and bottom surfaces.

5 29. The composite of claim 26, wherein the face layer further comprises a needled non-woven web containing the plurality of fibers, the top surface comprising a plurality of downwardly facing fiber loops and the bottom surface comprising a plurality of free fiber ends, and wherein the free fiber ends increase the surface contact.

10 30. The composite of claim 29, wherein the needled non-woven web is formed by spunlacing.

31. The composite of claim 29, wherein the needled non-woven web is formed by needle-punching.

15 32. The composite of claim 26, wherein the face layer comprises a gathered layer, the top surface comprising a plurality of downwardly facing loops and the bottom surface comprising a plurality of upwardly facing loops, and wherein the upwardly facing loops increase the surface contact.

20 33. The composite of claim 26, wherein the face layer comprises a knit fabric, the bottom surface comprising the pile side of the knit fabric, and wherein the pile side of the knit fabric increases the surface contact.

25 34. The composite of claim 26, wherein the face layer comprises a woven pile fabric, the bottom surface comprising the pile side of the woven file fabric, and wherein the pile side of the woven fabric increases the surface contact.

35. A method for making a composite, the method comprising:

selecting a fibrous face layer comprising a plurality of fibers, wherein the face layer has a top surface and a bottom surface opposite the top surface, and wherein the face layer comprises a plurality of legs dependent there from;

5 placing an adhesive layer in direct contact with the bottom surface of the fibrous face layer; and

embedding the legs of the fibrous face layer in the adhesive layer a distance sufficient to anchor the face layer in the adhesive layer.

36. The method of claim 35, further comprising needle punching the face layer to produce
10 the plurality of legs, the plurality of legs comprising a plurality of free fiber ends at the bottom surface.

37. The method of claim 35, further comprising spunlacing the face layer to produce the plurality of legs, the plurality of legs comprising a plurality of free fiber ends at the bottom
15 surface.

38. The method of claim 35, wherein the step of embedding the adhesive layer comprises:
activating the adhesive layer; and
applying pressure to the top surface of the face layer.
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39. The method of claim 35, wherein the step of embedding the adhesive layer comprises
needle punching the plurality of legs into the adhesive layer.

40. The method of claim 35, further comprising placing a backing layer in direct contact
25 with the adhesive layer such that the adhesive layer is disposed between the backing layer and the face layer and embedding the adhesive layer into the backing.

41. The method of claim 40, wherein the step of embedding the adhesive layer comprises
needle punching the plurality of legs completely through the adhesive layer and into the
30 backing.

42. The method of claim 35, wherein the step of selecting a face layer comprises selecting a stitching substrate comprising the plurality of fibers, stitch bonding the substrate using a shrinkable yarn, and shrinking the yarn to produce a gathered fabric structure to form the plurality of legs corresponding the undulating loops of the gathered fabric structure.

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43. The method of claim 42, wherein the adhesive layer is a shrinkable adhesive layer that is attached to the substrate before stitchbonding and shrinking.

10 44. The method of claim 35, wherein the step of selecting a face layer comprises selecting a fibrous substrate containing the plurality of fibers, placing a shrinkable substrate in contact with the fibrous substrate bonding the fibrous substrate to the shrinkable substrate and shrinking the shrinkable layer to form a gathered fabric structure to form the plurality of legs corresponding the undulating loops of the gathered fabric structure.

15 45. The method of claim 44, wherein the adhesive is a shrinkable adhesive placed in direct contact with the shrinkable adhesive before bonding and shrinking.

46. The method of claim 35, wherein the face layer comprises a knit face layer and the method further comprises cutting the bottom surface of the face layer to produce the plurality of legs.

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47. The method of claim 46, further comprising stabilizing the top surface of the face layer before cutting the bottom surface.

25 48. The method of claim 35, wherein the face layer comprises a woven face layer and the method further comprises cutting the bottom surface of the face layer to produce the plurality of legs.

49. The method of claim 48, further comprising stabilizing the top surface of the face layer before cutting the bottom surface.

50. The method of claim 35, further comprising embossing the composite with a 3-dimensional face texture.

51. A fabric layer made from process comprising the steps of:
selecting a fibrous layer comprising a plurality of fibers, wherein the face layer has a top surface and a bottom surface opposite the top surface,
10 stabilizing the top surface of the face layer; and
cutting the bottom surface of the face layer to produce a plurality of free fiber ends.

52. The fabric layer of claim 51, wherein the fibrous layer comprises a knit layer.

15 53. The fabric layer of claim 51, wherein the fibrous layer comprises a woven layer.

54. The fabric layer of claim 51, wherein the step of stabilizing the top surface comprises placing an adhesive on the top surface.

20 55. The fabric layer of claim 51, wherein the step of stabilizing the top surface comprises placing the top surface in contact with a high friction surface.